

Appl. No. 10/711,685  
Docket No. 03-025/PES-0220

## REMARKS / ARGUMENTS

### Status of Claims

Claims 1-22 are pending in the application and stand rejected. Of the pending claims, Applicant herein provides clarifying remarks, for consideration by the Examiner, to traverse the rejections. No claim amendments have been made, and therefore under 37 CFR 1.121, no claim listing is provided herewith.

Applicant respectfully submits that the rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

These accompanying remarks were not presented earlier because Applicant did not fully appreciate the nature of the Examiner's position until the Applicant was advised in more detail of the position by the final rejection.

### Non-Statutory Double Patenting Rejection

Claim 1 stands provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1, 6 and 7 of copending Application No. 10/985,633. The Examiner comments that although the conflicting claims are not identical, they allegedly are not patentably distinct from each other.

While Applicant respectfully disagrees that Claim 1 of the instant application is unpatentable over Claims 1 and 6 of copending Application No. 10/985,633 for all of the reasons set forth below traversing the prior art, Applicant nonetheless hereby submits an executed terminal disclaimer in compliance with 37 CFR 1.321(c) to overcome the rejection of Claim 1 in view of Claim 7 of copending Application No. 10/985,633.

### Rejections Under 35 U.S.C. §102(b)

Claims 1-3, 8-13, 16-22 stand rejected under 35 U.S.C. §102(b) as being anticipated by Faita et al. (U.S. Patent No. 5,565,072, hereinafter Faita).

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Applicant traverses this rejection for the following reasons.

Applicant respectfully submits that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, *in a single prior art reference.*” *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). Moreover, “[t]he identical invention must be shown in as complete detail as is contained in the \*\*\* claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the single source must disclose all of the claimed elements “*arranged as in the claim.*” *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984) (emphasis added). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

The Examiner acknowledges the term “through channel” to mean “the presence of a slot or a hole that is made in the respective part (layer)” as disclosed in the specification (para. 28). Paper 20051222, page 3.

The Examiner acknowledges that the through channels present on the Applicant’s first and second layer are “holes” that penetrate through the first and second layer. However, the Examiner further comments that the “holes” become merely an indent or a groove once all three layers are laminated. Paper 20051222, pages 9-10.

The Examiner acknowledges that the limitation of the layers was considered, but was not seen as a distinction over prior art comprising one layer. Paper 20051222, page 3.

The Examiner comments that the claimed layers in the bipolar plate are present as one layer in the final product, since the Applicants do not specify that each layer comprises a different material. Paper 20051222, page 10.

In respectful disagreement with the Examiner, Applicant submits that the claimed invention, which comprises a plurality of layers where each layer comprises a plurality of

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through-hole channels, is substantially different from prior art comprising just a single layer (having machined grooves for example).

At the outset, Applicant submits that a laminated assembly is an assembly of laminations (first, second and third layers in an embodiment of the instant invention), not a solid part (machined or otherwise). In various technical arts (such as electrical transformers and structural beams for example), laminations are used in place of a solid piece of the same material for the advantages that they provide over a solid piece, and for the structural differences that they also provide, which Applicant submits is the situation in the instant invention. In rejecting the claimed invention, it appears to Applicant that the Examiner has totally disregarded the structural differences that the laminations of the claimed invention has over prior art comprising just a single layer.

More specifically, Independent Claims 1, 13 and 20 recite, inter alia,

*"...a third layer disposed between and bonded to the first and second layers, the third layer having a first set of through-hole header channels in fluid communication with the first plurality of channels, and a second set of through-hole header channels in fluid communication with the second plurality of channels..."* (Claims 1 and 13); and

*"...first, second, and third, layers bonded together to form a laminated arrangement, the first layer having a first set of through-hole channels, the second layer having a second set of through-hole channels, and the third layer having a third and a fourth set of through-hole channels, the third layer being disposed between the first and second layers;*

...

*wherein the first inlet port, the first set of through-hole channels, the third set of through-hole channels, and the first outlet port, define a first fluid flow path;*

*wherein the second inlet port, the second set of through-hole channels, the fourth set of through-hole channels, and the second outlet port, define a second fluid flow path..."* (Claim 20).

Dependent claims inherit all of the limitations of the respective parent claim.

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Here, and as claimed, *the third layer necessarily must be disposed between the first and second layers, and the third layer necessarily must have first and second sets of through-hole header channels in fluid communication with the respective first and second plurality of channels of the respective first and second layer.*

As such, the structure of *the laminated assembly* of the first, second and third layers, *necessarily must have header channels (specifically defined as through-holes in the third intermediate layer) disposed between the first and second layers*, not disposed between the first layer and the third layer, and not disposed between the second layer and the third layer.

Since the third layer has the through-hole header channels, *the laminated assembly necessarily results in the flow region defined by the header channels being bounded on one side by a surface of the first layer, and bounded on the other side by a surface of the second layer*, which is clearly shown in Figures 2-4, and which is clearly a result of the claim language itself.

Accordingly, Applicant submits that through-hole channels are structurally and substantially different from grooved channels, especially in a laminated assembly as claimed.

In rejecting Claims 1, 13 and 20 for anticipation, the Examiner alleges that Faita discloses each and every element arranged as claimed. Paper 20051222, pages 4, 5 and 7.

However, in alleging the disclosure of the claimed invention (each and every element arranged as claimed), the Examiner does not find Faita to disclose a third layer *arranged as claimed*, but instead alleges that "Faita discloses a bipolar plate with a first and second side comprising *grooves* (through channels) (col. 15, lines 66-67) and holes (ports) (3 in Fig. 2) connected by distribution channels (header channels) (3 in Fig. 2)." Paper 20051222, page 4. The Examiner further comments "As illustrated in Fig. 2 and 3 of Faita, it is noted that when the bipolar plate (1) assembles with the gasket (8), the distribution channels (3) on the bipolar plate coincide with the channels (11) of the gasket (8), and Faita's distribution channels becomes enclosed, *thus meeting Applicant's limitation 'through channels' on the third layer.*" Paper 20051222, page 10.

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As best understood by Applicant, it appears that the Examiner is equating Faita's gasket (8) with the claimed first layer, and Faita's bipolar plate (1) with the claimed third layer, in order to establish *the claimed through channels*, since without this arrangement, the Examiner has not established where Faita discloses *the claimed through channels*.

If Applicant understands the Examiner's interpretation of Faita correctly, then Applicant finds the Faita through channels to be *disposed between the first layer (gasket 8) and the third layer (bipolar plate 1)*, which is entirely contrary to the claimed invention.

As discussed above, the claimed invention claims a laminated assembly of the first, second and third layers, that *necessarily must have header channels* (specifically defined as through-holes in the third intermediate layer) *disposed between the first and second layers*, not disposed between the first layer and the third layer, and not disposed between the second layer and the third layer.

By the very nature of the claimed invention being drawn to a laminated arrangement of layers with through-hole channels, Applicant submits that the structure of the claimed invention is substantially different from the structure of the Faita single bipolar plate layer with assembled gasket.

As such, Applicant respectfully submits that Faita does not disclose each and every element of the claimed invention *arranged as claimed*, and absent anticipatory disclosure of each and every element *arranged as claimed*, Faita cannot be anticipatory.

In view of the foregoing remarks, Applicant submits that Faita does not disclose each and every element of the claimed invention arranged as claimed and therefore cannot be anticipatory. Accordingly, Applicant respectfully submits that the Examiner's rejection under 35 U.S.C. §102(b) has been traversed, and requests that the Examiner reconsider and withdraw of this rejection.

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**Rejections Under 35 U.S.C. §103(a)**

Claims 4, 5 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Faita and further in view of Wilson (U.S. Patent Application No. 2004/0197630, hereinafter Wilson).

Claims 6, 7 and 15 stand rejected under 35 U.S.C. §1039a) as being unpatentable over Faita and further in view of Toshihiro (JP-05-251097).

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention arranged in such a manner as to perform as the claimed invention performs. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Claims 4-7, and 14-15 are dependent claims, and dependent claims inherit all of the limitations of the parent claim and any intervening claim.

In view of the foregoing discussion regarding the rejections under 35 U.S.C. §102, Applicant submits that Claims 4-7 and 14-15 are allowable for at least the reason that they depend from allowable claims. In considering the References as a whole, Applicant submits that the secondary references fail to cure the deficiencies of Faita as set forth above.

**Regarding Claims 4, 5 and 14 More Specifically**

In alleging that Claims 4, 5 and 14 are unpatentable, the Examiner alleges that "Since the layers do not exist in the final product, the Examiner has interpreted the thickness [of a defined layer] to be the thickness between the valley of the grooves on each side of the [prior art] plate." Paper 20051222, page 8.

Applicant respectfully disagrees with the Examiner's allegation that the layers do not exist in the final product. Throughout the instant application, Applicant describes, illustrates, and claims, a laminated assembly. Nowhere does Applicant describe,

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illustrate, or claim an arrangement of layers that are melted together to form a single solid block. Hence, and entirely contrary to the Examiner's allegation, the claimed layers do indeed exist in the final product.

"All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). MPEP §2143.03.

As a further example of the claimed layers existing in the final product, Applicant respectfully directs the Examiner's attention to Figure 4, which illustrates an embodiment of the claimed first set of through-hole header channels 270 being in fluid communication with the first plurality of through-hole channels 250 of first layer 245. As described at Paragraph [0028], the first set of header channels 270 includes a first through channel 271 extending from a first inlet port 280 across the ends of the first plurality of channels 250, and a second through channel 272 extending from a first outlet port 285 across the opposite ends of the first plurality of channels 250. From the description and illustration presented, one skilled in the art would recognize that header channels 271 and 272 run under the first plurality of through-hole channels 250, thereby being exposed from the "outside" only in those regions where through-hole channels 250 exist, and being hidden from view otherwise. As such, the hidden portions of header channels 271 and 272 result in the thickness of first layer 245 most definitely being present in the final product as it is these portions of first layer 245 that "hide" the hidden portions of header channels 271 and 272, which is entirely contrary to the Examiner's allegation and interpretation. Even without these hidden portions, the claimed invention still recites discrete layers with defined thicknesses.

Applicant respectfully submits that it is impermissible for an Examiner to modify a claim in such a manner that is contrary to the very language of the claim itself, that is contrary to the description and illustration presented in the specification, and that results in the elimination of an element of the claimed invention, as such a modification would render worthless that element of the claim. Absent a teaching or suggestion of each and

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every element of the claimed invention arranged so as to perform as the claimed invention performs, a prima facie case of obviousness cannot be established.

In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what the patent Applicant has done, fail to offer any reasonable expectation of success in combining the References to perform as the claimed invention performs, and disclose a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

In light of the foregoing remarks, Applicant respectfully submits that the arguments comply with 37 C.F.R. §1.116 and should therefore be entered, and with their entry that the Examiner's rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) have been traversed, and that the application is now in condition for allowance. Such action is therefore respectfully requested.



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The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 06-1130, such as the terminal disclaimer fee under 37 CFR 1.20(d) in the amount of \$65.00 (Small Entity).

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above-identified Deposit Account.

Respectfully submitted,

CANTOR COLBURN LLP

Applicant's Attorneys

By: 

David Arnold  
Registration No: 48,894  
Customer No. 23462

Address: 55 Griffin Road South, Bloomfield, Connecticut 06002  
Telephone: (860) 286-2929  
Fax: (860) 286-0115